

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application:

1. (Currently amended) A power system common power source subsystem comprising:
 - a power source unregulated bus;
 - a power source regulated bus adapted to connect in a mesh topology to a plurality of subsystems;
 - at least one power source, each of said at least one power source having an output;
 - a first group of at least one switch, each of said first group of at least one switch coupling a respective one of said at least one power source output to said power source unregulated bus;
 - at least one regulator, each of said at least one regulator having an input and an output;
 - a second group of at least one switch, each of said second group of at least one switch coupling a respective input of said at least one regulator to said power source unregulated bus; and
 - a third group of at least one switch, each of said third group of at least one switch coupling a respective one of said at least one regulator output to said power source regulated bus;
 - a controller having a plurality of outputs and capable to provide a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystems, at least one of said plurality of outputs coupled to at least one of said first group of at least one switch, at least one of said plurality of outputs coupled to at least one of said second group of at least one switch, and at least one of said plurality of outputs coupled to at least one of said third group of at least one switch; and
 - at least one sensor, each of said at least one sensor having an output coupled to said controller.

2. (Original) The power system common power source subsystem of claim 1 further comprising:

at least one stabilizer, each of said at least one stabilizer having an input coupled to a respective power source, and having an output; and

a fourth group of at least one switch, each of said fourth group of at least one switch coupling a respective stabilizer output to said power source unregulated bus.

3. (Original) The power system common power source subsystem of claim 2 further comprising at least one energy storage element, each of said at least one energy storage element having an output coupled to a respective one of said at least one regulator.

4. (Original) The power system common power source subsystem of claim 1 wherein said power source is selected from the group consisting of a battery, a generator, a fuel cell and a solar cell.

5. (Original) The power system common power source subsystem of claim 1 wherein said stabilizer comprises a device wherein a first voltage level is converted to a second voltage level.

6. (Currently amended) The power system common power source subsystem of claim [1]3 wherein said energy storage [unit]element is selected from the group consisting of a battery, a flywheel, a capacitor, and an inductor.

7. (Currently amended) A power system subsystem component comprising:

a subsystem unregulated bus;

a subsystem regulated bus adapted to connect in a mesh topology to a plurality of subsystems;

a power source having an output;

a first group of at least one switch, each of said first group of at least one switch coupling said power source output to said subsystem regulated bus;

a controller having a plurality of outputs and capable to provide a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystems, at least one of said plurality of outputs coupled to at least one of said first group of at least one switch; and

at least one sensor, each of said at least one sensor having an output coupled to said controller.

8. (Original) The power system subsystem component of claim 7 further comprising:

at least one regulator, each of said at least one regulator having an input coupled to said subsystem unregulated bus, and an output; and

a second group of at least one switch, each of said second group of at least one switch coupling a respective output of said at least one regulator to said subsystem regulated bus and wherein said second group of at least one switch is controlled by said controller.

9. (Original) The power system subsystem component of claim 7 further comprising:

at least one stabilizer, each of said at least one stabilizer having an input coupled to said subsystem unregulated bus, and having an output; and

a third group of at least one switch, each of said second group of at least one switch coupling a respective stabilizer output to said subsystem regulated bus and wherein said third group of at least one switch is controlled by said controller.

10. (Original) The power system subsystem component of claim 7 further comprising:

at least one energy storage element, each of said at least one energy storage element having an output; and

a fourth group of at least one switch, each of said fourth group of at least one switch coupling a respective output of said at least one energy storage element to said subsystem

regulated bus and wherein said fourth group of at least one switch is controlled by said controller.

11. (Original) The power system subsystem component of claim 7 further comprising:
at least one load; and

a fifth group of at least one switch, each of said fifth group of at least one switch coupling a respective load to said subsystem regulated bus and wherein said fifth group of at least one switch is controlled by said controller.

12. (Original) The power system subsystem component of claim 7 wherein said power source is selected from the group consisting of a battery, a generator, a fuel cell and a solar cell.

13. (Original) The power system subsystem component of claim 7 wherein said stabilizer comprises a device wherein a first voltage level is converted to a second voltage level.

14. (Currently amended) The power system subsystem component of claim [7]10 wherein said energy storage [unit]element is selected from the group consisting of a battery, a flywheel, a capacitor, and an inductor.

15. (Currently amended) A power system comprising:
a common power source component;
at least [one]two or more power system subsystem components[component]; and
an interconnect connecting said common power source component and said at least [one]two or more power system subsystem [component]components in a mesh topology configuration.

16. (Original) The power system of claim 15 wherein said interconnect includes at least one power interconnect and at least one control signal interconnect.

17. (Original) The power system of claim 16 wherein said control signal interconnect comprises an interconnect selected from the group consisting of electrical, optical infrared and wireless.

18. (Currently amended) The system of claim 17 wherein said common power source component comprises:

- a power source unregulated bus;

- a power source regulated bus adapted to connect in a mesh topology to a plurality of subsystem components;

- at least one power source, each of said at least one power source having an output;

- a first group of at least one switch, each of said first group of at least one switch coupling a respective one of said at least one power source output to said power source unregulated bus;

- at least one regulator, each of said at least one regulator having an input and an output;

- a second group of at least one switch, each of said second group of at least one switch coupling a respective input of said at least one regulator to said power source unregulated bus; and

- a third group of at least one switch, each of said third group of at least one switch coupling a respective one of said at least one regulator output to said power source regulated bus;

- a controller having a plurality of outputs and capable to provide a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystem components, at least one of said plurality of outputs coupled to at least one of said first group of at least one switch, at least one of said plurality of outputs coupled to at least one of said second group of at least one switch, and at least one of said plurality of outputs coupled to at least one of said third group of at least one switch; and

- at least one sensor, each of said at least one sensor having an output coupled to said controller.

19. (Currently amended) The system of claim 17 wherein said power system subsystem component comprises:

- a subsystem unregulated bus;
- a subsystem regulated bus adapted to connect in a mesh topology to a plurality of subsystem components;
- a power source having an output;
- a first group of at least one switch, each of said first group of at least one switch coupling said power source output to said subsystem regulated bus;
- a controller having a plurality of outputs and capable to provide a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystem components, at least one of said plurality of outputs coupled to at least one of said first group of at least one switch; and
- at least one sensor, each of said at least one sensor having an output coupled to said controller.

20. (Original) The system of claim 18 wherein said power system common power source subsystem further comprises:

- at least one stabilizer, each of said at least one stabilizer having an input coupled to a respective power source, and having an output; and
- a fourth group of at least one switch, each of said fourth group of at least one switch coupling a respective stabilizer output to said power source unregulated bus.

21. (Original) The system of claim 18 wherein said power system common power source subsystem further comprises at least one energy storage element, each of said at least one energy storage element having an output coupled to a respective one of said at least one regulator.

22. (Original) The system of claim 18 wherein said power source is selected from the group consisting of a battery, a generator, a fuel cell and a solar cell.

23. (Original) The system of claim 18 wherein said stabilizer comprises a device wherein a first voltage level is converted to a second voltage level.

24. (Currently amended) The system of claim [18]21 wherein said energy storage [unit]element is selected from the group consisting of a battery, a flywheel, a capacitor, and an inductor.

25. (Original) The system of claim 19 wherein said power system subsystem component further comprises:

at least one regulator, each of said at least one regulator having an input coupled to said subsystem unregulated bus, and an output; and

a second group of at least one switch, each of said second group of at least one switch coupling a respective output of said at least one regulator to said subsystem regulated bus and wherein said second group of at least one switch is controlled by said controller.

26. (Original) The power system subsystem component of claim 19 further comprising:

at least one stabilizer, each of said at least one stabilizer having an input coupled to said subsystem unregulated bus, and having an output; and

a third group of at least one switch, each of said second group of at least one switch coupling a respective stabilizer output to said subsystem regulated bus and wherein said third group of at least one switch is controlled by said controller.

27. (Original) The power system subsystem component of claim 19 further comprising:

at least one energy storage element, each of said at least one energy storage element having an output; and

a fourth group of at least one switch, each of said fourth group of at least one switch coupling a respective output of said at least one energy storage element to said subsystem regulated bus and wherein said fourth group of at least one switch is controlled by said controller.

28. (Original) The power system subsystem component of claim 19 further comprising:

at least one load; and

a fifth group of at least one switch, each of said fifth group of at least one switch coupling a respective load to said subsystem regulated bus and wherein said fifth group of at least one switch is controlled by said controller.

29. (Original) The power system subsystem component of claim 19 wherein said power source is selected from the group consisting of a battery, a generator, a fuel cell and a solar cell.

30. (Original) The power system subsystem component of claim 19 wherein said stabilizer comprises a device wherein a first voltage level is converted to a second voltage level.

31. (Currently Amended) The power system subsystem component of claim [19]27 wherein said energy storage [unit]element is selected from the group consisting of a battery, a flywheel, a capacitor, and an inductor.

32. (Original) The power system of claim 15 wherein said power system supplies power in at least one mode, said at least one mode selected from the group consisting of a single power mode wherein a single power source supplies power for said power system, a simultaneous power mode wherein a first power source provides power to a first power source subsystem component and wherein a second power source provides power to a second power source subsystem component, and a sequential mode wherein a first power source provides power for said power system for a first time interval and a second power source provides power for said power system for a second time interval.

33. (New) A power system comprising:

at least one common power source component;

a plurality of k power system subsystem components, where k is an integer equal to or greater than one;

a first interconnect with k sets of power connections connecting all k said power system subsystem components and said common power source subsystem component, each of said sets of connections comprising R_o connections to subsystem regulated buses, where R_o is an integer equal to or greater than one, each of said sets of connections further comprising U connections to unregulated buses of said power system subsystem components, where U is an integer equal to or greater than one;

a second interconnect with $k*(k-1)/2$ sets of power connections connecting every one of k said power system subsystem components to all other said power system subsystem components, each of said sets of connections comprising at least one connection to the subsystem regulated bus, each of said sets of connections further comprising at least one connection to the subsystem unregulated bus, each of said sets of connections further comprising PR connections to subsystem power sources, where PR is an integer equal to or greater than one, each of said sets of connections further comprising E connections to subsystem energy storage elements where E is an integer equal to or greater than one.

34. (New) A method of operating a power system comprising:

time sharing power from a regulated power source to a plurality of loads where the time each one of the plurality of loads is connected to the regulated power source is different; and

time sharing power from an energy source other than the a regulated power source to a plurality of loads, where the energy source provides any power to the plurality of loads beyond the capability of the regulated power source.

35. (New) The method as recited in Claim 34 comprising:

recharging the energy source from the regulated power source when none of the plurality of loads demand power.